

Remarks/Argument

Claim Summary

Claims 1 and 9-12 remain pending in the application.

35 U.S.C. ¶103

Claims 1-6 and 9-12 were rejected under 35 U.S.C. ¶103 as being unpatentable over Kim et al. (US 5990016) in combination with Strang (US 6872259) and Watabe (US 5500256). Applicants respectively traverse this rejection with respect to the now pending claims.

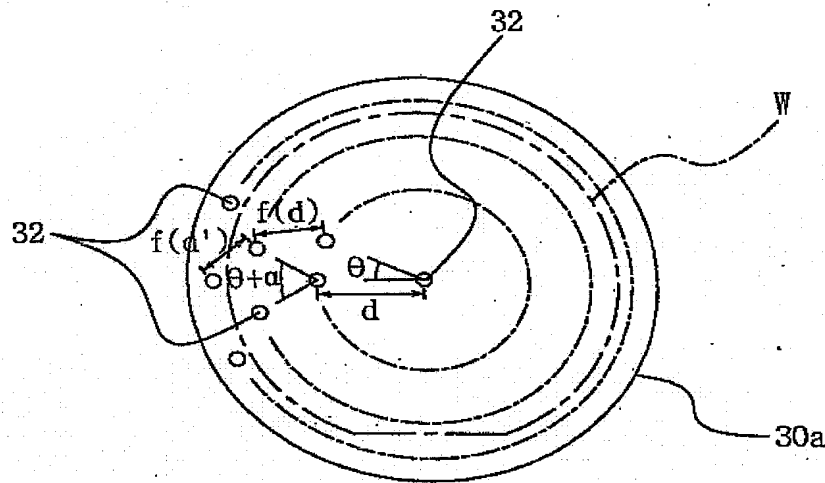
Claim 1 includes *inter alia* the following limitations:

“... the remainder of the nozzles being disposed in a plurality of concentric groups about the central nozzles, the nozzles in each group being spaced apart from one another by equal amounts, **the intervals between the central nozzles in any one group and closest nozzles in an adjacent group being decreased in a direction from the center of the electrode plate toward the outer peripheral edge portion thereof**”

Similarly, claim 9 includes *inter alia* the following limitations:

“ ... the remainder of the nozzles being disposed in a plurality of concentric groups about the central nozzles, the nozzles in each group being spaced apart from one another by equal amounts, **the intervals between the central nozzles in any one group and closest nozzles in an adjacent group being decreased in a direction from the center of the electrode plate toward the outer peripheral edge portion thereof**”

The Examiner's attention is directed to FIG. 11a of the present application, which for convenience is reproduced below:



As recited in claims 1 and 9, the upper electrode includes an electrode plate 30a and a plurality of nozzles 32 integral therewith. One nozzle 32 is disposed at the center of the electrode plate 30a, and the remainder of the nozzles 32 is disposed in a plurality of concentric groups about the central nozzle 32. The nozzles 32 in each group are spaced apart from one another by equal amounts. Also, intervals (d, f(d), f(d'),...) between the central nozzle 32 or nozzles 32 in any one concentric group, and closest nozzles 32 in the concentric adjacent group decrease in the radial direction, i.e., in a direction from the center of the electrode plate 30a toward the outer peripheral edge portion thereof.

Applicants can find no teaching or suggestion in the cited references of at least the above-identified limitations of claims 1 and 9.

The Examiner has made repeated references to FIG. 8 and the related disclosure of Kim et al. However, Kim et al. simply teaches that "more nozzle openings 82 are physically distributed at the periphery of the gas diffuser 81 than at its central portion." Col. 4, line 67, through col. 5, line 2. Kim et al. does not teach that

the intervals between the central nozzles in any one concentric group and closest nozzles in an adjacent concentric group are decreased in a direction from the center of the electrode plate toward the outer peripheral edge portion thereto.

Moreover, FIG. 5 of Strang clearly illustrates the nozzles 250 being arranged in equally spaced concentric circles. Strang does not teach that the intervals between the central nozzles in any one concentric group and closest nozzles in an adjacent concentric group are decreased in a direction from the center of the electrode plate toward the outer peripheral edge portion thereto.

Still further, the newly cited Watabe patent is directed to a non-concentric (spiral) arrangement, and clearly does not teach that the intervals between the central nozzles in any one concentric group and closest nozzles in an adjacent concentric group are decreased in a direction from the center of the electrode plate toward the outer peripheral edge portion thereto

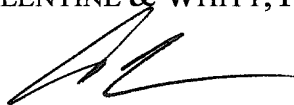
For **at least** the reasons stated above, Applicant's respectfully content that Kim et al. and Strang and Watabe, taken individually or in combination, do not teach or suggest the above-discussed features of independent claims 1 and 9. For at least these reasons, Applicants further contend that claims 1 and 9-12 define over the prior art.

Conclusion

No other issues remaining, reconsideration and favorable action upon the claims 1 and 9-12 now pending in the application are requested.

Respectfully submitted,

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